

TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.  
00280647AA

In Re Application Of: T-K Liu, et al.

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
09/652,159	8/31/00	V. Frenel	30743	3626	2619

Invention: Access Control for Rental Cars

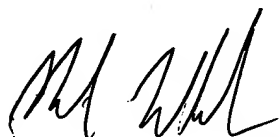
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Dated: Jan. 28, 2005

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Re patent application of

Te-Kai Liu et al.

Serial No. 09/652,159

Filed August 31, 2000

For ACCESS CONTROL FOR RENTAL CARS

Group Art Unit 3626

Examiner: Vanel Frenel

Commissioner for Patents

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APPELLANTS' BRIEF UNDER 37 C.F.R. § 1.192

This brief, which is filed herewith in triplicate, is in furtherance of the Notice of Appeal, filed January 10, 2005.

This brief contains these items under the following headings and in the order set forth below, as required under 37 C.F.R. § 1.192(c):

- I. REAL PARTY IN INTEREST
- II. RELATED APPEALS AND INTERFERENCES
- III. STATUS OF CLAIMS
- IV. STATUS OF AMENDMENTS
- V. SUMMARY OF INVENTION
- VI. ISSUES
- VII. GROUPING OF CLAIMS
- VIII. ARGUMENTS

☐ ARGUMENT VIIIA. REJECTIONS UNDER 35 U.S.C. §112, FIRST  
PARAGRAPH

☐ ARGUMENT VIIIB. REJECTIONS UNDER 35 U.S.C. §112, SECOND  
PARAGRAPH

☐ ARGUMENT VIIC. REJECTIONS UNDER 35 U.S.C. §102

☒ ARGUMENT VIID. REJECTIONS UNDER 35 U.S.C. §103

☐ ARGUMENT VIIE. REJECTION OTHER THAN 35 U.S.C. §§102, 103  
AND 112

IX. APPENDIX OF CLAIMS INVOLVED IN THE APPEAL

X. OTHER MATERIALS THAT APPELLANT CONSIDERS NECESSARY OR  
DESIRABLE

I. REAL PARTY IN INTEREST

The real party in interest in the appeal is:

- ☐ the party named in the caption of this brief.
- ☒ the following party:

International Business Machines Corporation of Armonk, New York.

## II. RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal:

☒ there are no such appeals or interferences.

☐ these are as follows:

### III. STATUS OF CLAIMS

The status of the claims in this application is as follows:

A. Total number of claims in Application

Claims in the application are: Claims 1-20, totaling 20 claims

B. Status of all the claims:

1. Claim cancelled: None
2. Claims withdrawn from consideration but not cancelled: None
3. Claims pending: Claims 1-20
4. Claims allowed: None
5. Claims rejected: Claims 1-20

C. Claims on Appeal.

The claims on appeal are: Claims 1-20

#### IV. STATUS OF AMENDMENTS

The status of amendments filed subsequent to the final rejection is as follows:  
There have been no amendments filed subsequent to the final rejection dated October 12, 2004. (There were, however, amendments filed subsequent to a previous final rejection dated November 25, 2003.)

## V. SUMMARY OF INVENTION

The claimed invention provides a rental car system in which cars are operated by digital keys instead of conventional keys and in which, among other things, there is no need for a data communication link between a rental car and a central station or transaction-by-transaction reprogramming of a rental car's reader. Each of the cars has the means to invalidate a digital key at the end of a rental period.

It is commonplace in rental car systems for car keys to be left in cars when cars are waiting to be picked up by customers and when cars are dropped off by customers at the end of the rental period. As a result, rental car keys are vulnerable to theft or copying which would, for example, enable a criminal to follow a rental car when it leaves a parking lot and steal the car when it is unattended.

The present invention makes it possible to secure a vehicle in a car rental system without the use of conventional car keys, and to do so without requiring a data communication link between a car and a central station to determine whether an operator is authorized to use the car. In addition, the present invention does not require reprogramming of a rental car's reader in order to prepare it for the next renter.

As shown in Figure 1, the present invention includes a computing system 10, a portable storage device 12, and an access control device 14 with an interface 16 to a portable storage inside a rental car 160. The computing system 10 is used to make reservations and to create and store the digital keys used to enable operation of a rental cars 160. Such computing system 10 may be of various types, including (without limitation) a terminal located in a kiosk 140 at a car rental agency or a personal computer 130 located at a home, office or other location. In either case, such computer system 10 is to be capable of connecting to the central reservation server 110 via a network 120, which may be the Internet. The computing system 10 may be provided with way to download a digital key to a portable storage device 12. Such portable storage device may take the form of a smart card issued by the car rental agency, a personal digital assistant, a memory card, or a diskette. The digital key may specify the starting



date and time of a given rental transaction, as well as the identification of the car for which the key is provided. The digital key may be signed by the car rental system for authenticity and may include information, such as a personal identification number known only to the renter, to prevent a lost digital key from being used by unauthorized persons. A renter may thus bring a portable storage device 12 containing a digital key to a rental car 160 equipped with an access control device 14 capable of reading the digital key from the portable storage device 12 and, upon authentication of the digital key by the access control device, enable operation of the rental car 160. When the rental car 160 is returned, the car invalidates the digital key so that it can no longer be used to operate the car, and the renter may present the invalidated digital key to a central station of the car rental system. The renter may be held liable for the rental car until the invalidated digital key is presented to a central station of the car rental system at the conclusion of the rental period. Since the in-car controller is able to decipher authorization information from a digital key, there is no need to reprogram the in-car controller for the next renter.

## VI. ISSUES

The issue presented in this appeal is: Whether Claims 1-20 are obvious over a combination of U.S. Patent No. 6,253,980 to Murakami et al. in view of U.S. Published Patent Application No. 2002/0022979 to Whipp et al. and further in view of U.S. Published Patent Application No. 2003/0206117 to Rosenberg et al.

## VII. GROUPING OF CLAIMS

Claim Group 1. Claims disclosing a car rental system. (Claims 1-5, 8, and 20)

Claim Group 2. Claims disclosing a computer implemented method for operating a car rental system. (Claims 11-14 and 19)

Claim Group 3. Claims disclosing a rental car system in which a digital key is stored on a user-provided device. (Claims 6-7)

Claim Group 4. Claims disclosing a rental car system in which a digital key is invalidated by a renter when a car is returned. (Claims 9-10)

Claim Group 5. A claim disclosing a method of creating a digital key for a car rental system. (Claim 15)

Claim Group 6. A claim disclosing a method of employing a portable storage device as a digital key in a rental car. (Claims 16-18)

The claims of the above-mentioned groups do not stand or fall together. Reasons as to why the grouped claims are separately patentable are included in the arguments.

ARGUMENT VIII.A. REJECTIONS UNDER 35 U.S.C. §112, FIRST PARAGRAPH

There are no rejections under 35 U.S.C. §112, first paragraph.

ARGUMENT VIII B. REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH

There are no rejections under 35 U.S.C. §112, second paragraph.

ARGUMENT VIIC. REJECTIONS UNDER 35 U.S.C. §102

There are no rejections under 35 U.S.C. §102.

#### ARGUMENT VIID. REJECTIONS UNDER 35 U.S.C. §103

Pursuant to a final rejection dated October 12, 2004 (the “Final Rejection”), Claims 1-20 have been rejected under 35 U.S.C. § 103(a) as obvious in view of U.S. Patent No. 6,253,980 to Murakami et al., in view of U.S. Published Patent Application No. 2002/0022979 to Whipp et al., and further in view of U.S. Published Patent Application No. 2003/0206117 to Rosenberg et al. In making this rejection, the Examiner failed to consider the claimed invention and the references as a whole and has failed to determine obviousness by application of the standard of reasonable expectation of success. *Cf.* M.P.E.P. § 2141. Among other errors, none of the references relied upon by the Examiner suggests the limitation “wherein there exists *no data communication link between the fleet of cars and the management system*” (as in independent Claim 1, emphasis added) or the limitation “downloading the digital key to a portable storage device, the portable storage device being used to gain access to a rental car *without communication between the rental car and the reservation server*” (as in independent Claim 11, emphasis added).

The present invention provides a rental car system in which cars are operated by non-conventional digital keys, improving upon the prior art by providing rental car security in a manner that does not require a data communication link between cars and a central station or transaction-by-transaction reprogramming of a rental car’s reader, among other things. As discussed in the Summary of Invention, above, it is commonplace in rental car systems for car keys to be left in a rental car when the car is waiting to be picked up and when a car is returned at the end of a rental period. As a result, keys are vulnerable to theft or copying which would, for example, enable a criminal to follow a rental car when it leaves the parking lot and steal it when it is unattended. The present invention provides a way to secure a vehicle in a car rental system without relying on conventional car keys. The present invention also provides rental car security in a manner that does not require a data communication link between cars and a central station, such as may be used in the prior art to determine whether use of

a vehicle is authorized. Because prior art systems rely on data communication links, they do not function when a link cannot be established. (See Specification, page 1, line 22 – page 2, line 1) The present invention further provides such security for rental cars without necessitating reprogramming of a card reader built into a rental car (or other preprocessing) to be done for each new rental transaction. This avoids the cost and time of reprogramming, which is important since card readers that require reprogramming are not suitable for application to rental car systems. (Specification, page 2, lines 9-11)

Both Murakami et al. and Whipp et al. teach that it is essential to have a data communication link between rental cars and a central station, the central station providing ID authentication to enable use of the rental car. (Murakami et al., column 12, lines 23-67; Whipp et al., Figure 1, 0026 and 0061) Murakami et al. and Whipp et al. do not teach a way to provide authentication without such a data communication link, as is done by independent Claims 1 and 11 of the present invention. Because a data communication link is essential to both Murakami et al. and Whipp et al., no conceivable combination of Murakami et al. and Whipp et al. could produce the claimed invention. The Examiner raised Rosenberg et al. to make up for the deficiencies of Murakami et al. and Whipp et al. Rosenberg et al., however, do not teach that a digital key may be validated without a data communication link and do not otherwise provide essential features missing from Murakami et al. and Whipp et al. Furthermore, it is essential to Rosenberg et al. that a continuous data link is necessary while a vehicle is in normal use, even though a one-time data link may be sufficient when a vehicle is to be moved for parking purposes. (See, e.g., Rosenberg et al., Paragraphs 0071 and 0199)

While the system of Rosenberg et al. may be operated for parking purposes in a manner that eliminates the need for communication between a *vehicle location system control center* and a *central computer*, the need for communication *from the car to a central computer* is not eliminated. To the contrary, *Rosenberg et al. require a data communication link to a central station* to determine whether a driver is authorized to use a car, even when only for parking purposes. The system of Rosenberg requires a driver to choose either (a) to activate “the signal which starts the operation of the VLU [vehicle



locator unit] [and which] will also cause the central computer to be placed in information exchange connection with the vehicle location control center” or (b) to “communicate to the central computer a parking code containing identification to the parking zone, as herein described, and in this case there will be no need for exchange of information between the vehicle location system control center and the central computer.”

(Rosenberg et al., Paragraph 0071, cited in the Final Rejection at 3; *see also* Rosenberg et al., Paragraph 0199)

Rosenberg et al. do not make up for the deficiencies of Murakami et al. and Whipp et al., and the combination of Rosenberg et al. with Murakami et al. and Whipp et al. does not support the rejection of the claimed invention under 35 U.S.C. §103(a).

#### Claim Group 1

Claim Group 1 (Claims 1-5, 10, and 20) is drawn to a rental car system. Claim 1 is the base claim of Claim Group 1, while Claims 2-5, 8 and 20 recite distinct, separately patentable features which may or may not be used in connection with the base claim or with each other. The claims of Claim Group 1 are distinct, and separately patentable, from the claims of other claim groups. Claim 1, which may be taken as exemplary of Claim Group 1, is drawn to a car rental system comprising:

- a fleet of cars, each of which is operable only when a valid digital key is presented to the car, and each of said fleet of cars has a means to invalidate a digital key;
- and

- a management system for handling reservation and car return, said management system including:

- a key generation system for generating digital keys for renters of the car rental system;

- a key return system for processing digital keys returned by renters, wherein there exists no data communication link between the fleet of cars and the management system.

(Claim 1) Claims 2-5 add *inter alia* a secure parking facility where a access to a rental

car may be obtained by use of digital key issued by a management system. Claim 8 adds that the digital key comprises car and user identification to signed by the management system to authenticate the key. Finally, Claim 20 adds that each car has a storage device for storing a record of the car's digital key.

In rejecting Claim 1, the Examiner characterized Murakami et al. as disclosing "a car rental system comprising: a fleet of cars, each of which is operable only when a valid digital key is presented to the car, and each of said fleet of cars has a means to invalidate a digital key (See Murakami, Col. 6, lines 29-67 to Col. 7, line 63; Col. 11, lines 5-57)." (Final Rejection at 2) Murakami et al., however, do not suggest a "car rental system" but instead provide a "shared vehicle system" which provides collective control over a fleet of cars (preferably electric cars) to "subscribers" as an alternative to individual control of "private vehicles" in everyday use. (Murakami et al., column 1 at lines 57 – column 2, line 4) Thus, Murakami et al. provide a system that will compile a "statistical analysis of vehicle use patterns" of each subscriber for use in allocating vehicles on an as-needed basis (Murakami et al., column 6, lines 59-60) and is otherwise inconsistent with the "management system for handling reservation" claimed by Claim 1. In addition, Murakami et al. do not describe a car with a "means to invalidate a digital key" (Claim 1) after each car rental transaction but instead describe use of "user identification information, for example, read from a card key 21, smart card or other machine-readable method of identification." (Murakami et al., column 7, lines 3-7, cited in the Final Rejection at 2) Murakami et al. teach a form of user identification that appears to persist from transaction to transaction, perhaps because the disclosure of Murakami et al. is not directed to a car rental system but is instead directed to a "shared vehicle system" as discussed above.

The Examiner, recognizing that "Murakami does not explicitly disclose a key generation system for generating digital keys for renters of the car rental system [or] a key return system for processing digital keys returned by renters" (Final Rejection at 3), relies on Whipp et al. to make up for the deficiency. The Examiner characterizes Whipp et al. as "suggest[ing] a key generation system for generating digital keys for renters of the car

rental system (See Whipp, Page 3, Paragraphs 0025-0029; Page 5, Paragraphs 0050-0053).” (Final Rejection at 3) The disclosure of Whipp et al., however, provides something else:

The present invention further provides a method for releasing a vehicle to one of a plurality of different users, including: receiving data by a user located outside the vehicle through an interactive interface including a touch screen into a local computer located inside the vehicle; communicating the data entered into the local computer to a centralized data management system remotely located relative to the vehicle; selectively issuing an authorization for release of the vehicle to the user from the centralized data management system in response to the data entered by the user; communicating the *authorization from the centralized data management system* to the local computer; and automatically unlocking the vehicle and facilitating its starting in response to the authorization received by the local computer from the centralized data management system.

(Whipp et al., Paragraph 0027, cited in the Final Rejection at 3) (emphasis added) Whipp et al. thus do not describe a car with a “means to invalidate a digital key” (Claim 1), because the system of Whipp et al. is not capable of releasing a car to an operator without the car’s first obtaining “authorization from the centralized data management system.”

The Examiner, recognizing that Murakami et al. and Whipp et al. do not suggest the limitation of Claim 1, “wherein there exists no data communication link between the first fleet of cars and the management system,” has relied on Rosenberg et al. to make up for the deficiency. (Final Rejection at 3) As noted above, however, it is essential to Rosenberg et al. to maintain a continuous data link while a vehicle is in normal use, even though a one-time data link may be sufficient when a vehicle is to be moved for parking purposes. While the system of Rosenberg et al. may be employed in a manner that eliminates need for communication between a *vehicle location system control center* and a *central computer*, it is clear that Rosenberg et al. does not eliminate the need for communication *from the car to a central computer*. To the contrary, the disclosure of Rosenberg et al. *would require a data communication link between a driver and a central*

computer to initiate a data communication link involving a central station to determine whether a driver is authorized to use a car:

[I]f the VLU [vehicle location unit] is activated by the driver only for purposes of starting a parking procedure and only at the moment of parking, the same operational phases may take place, viz. the signal which starts the operation of the VLU will also *cause the central computer to be placed in information exchange connection with the vehicle location control center*; however, *alternatively the driver may communicate to the central computer a parking code containing identification to the parking zone*, as herein described, and in this case there will be no need for exchange of information between the vehicle location system control center and the central computer.

(Rosenberg et al., Paragraph 0071, cited in the Final Rejection at 3; *see also* Rosenberg et al., Paragraph 0199 and Figures 1-7) (emphasis added) Thus, the system of Rosenberg et al. provides that a driver may either (a) cause a central computer be put in communication with a vehicle location control center or (b) cause a parking code associated with a vehicle's current parking location to be communicated from the driver of the vehicle to a central computer. The system of Rosenberg et al. *does not provide access control for a driver to operate a vehicle without initiating some form of data communication involving a central station external to the car* in order to determine whether an operator is authorized to use the car. Claim 1, by contrast, enables the use of a digital key even when "there exists no data communication link between the fleet of cars and the management system."

Appellants thus respectfully submit that a combination of Murakami et al., Whipp et al., and Rosenberg et al. would not result in Claim Group 1.

#### Claim Group 2

Claim Group 2 (Claims 11-14 and 19) is drawn to a computer implemented method for operating a car rental system. Claim 11 is the base claim of Claim Group 2, while Claims 12-14 and 19 recite distinct, separately patentable features which may or

may not be used in connection with the base claim or with each other. The claims of Claim Group 2 are distinct, and separately patentable, from the claims of other claim groups. Claim Group 2 is patentably distinct from Claim Group 1, for example, because Claim Group 2 describe a distinct method for operating a car rental system, which may be the system described in Claim Group 1 or another system.

Claim 11, which may be taken as exemplary of Claim Group 2, is drawn to a computer implemented method for operating car rental system comprising the steps of:

accessing a reservation server by a prospective car renter to reserve a car;

authenticating the prospective car renter by the reservation server and, upon the reservation server successfully authenticating the user, prompting the prospective car renter for the date, time, and location for pickup and return, and the type of car;

checking by the reservation server an availability of a requested car and, if a car is available, creating by the reservation server a digital key by car and user information with a digital signature of the reservation server; and

downloading the digital key to a portable storage device, the portable storage device being used to gain access to a rental car without communication between the rental car and the reservation server.

(Claim 11) Claims 12-14 add that the reservation server may be accessed by a network, which may be the Internet. Claim 19 adds that the portable storage device to which the digital key is downloaded may be a smart card.

In rejecting Claim 11, the Examiner recognized that “Murakami does not explicitly disclose checking by the reservation server an availability of a requested car and, if a car is available, creating by the reservation server a digital key by car and user information with a digital signature of the reservation server [*cf.* Claim 11]; and downloading the digital key to a portable storage device, the portable storage device being used to gain access to a rental car [*cf.* Claim 11].” (Final Rejection at 6) Recognizing the deficiencies of Murakami et al. in this regard, the Examiner relied upon the disclosure of Whipp et al.:

Whipp suggests checking by the reservation server an availability of a requested car and, if a car is available, creating by the reservation server a digital key by car and user information with a digital signature of the reservation server (See Whipp, Page 5, Paragraphs 0050-0056)

(Final Rejection at 6) As discussed above in connection with Claim 1, however, Whipp et al. does not describe a digital key as used in the present invention. The system of Whipp et al. is not capable of releasing a car to an operator without the car's first obtaining "authorization from the centralized data management system." (Whipp et al., Paragraph 0027, cited in the Final Rejection at 3)

The Examiner further relies on Whipp et al. as suggesting the limitation of Claim 11 concerning the step of "downloading the digital key to a portable storage device, the portable storage device being used to gain access to a rental car (See Whipp, Page 5, Paragraphs 0050-0056)" (Final Rejection at 7) The Examiner neglects to acknowledge the second part of this limitation of Claim 11, "without communication between the rental car and the reservation server." Subsequently, however, the Examiner, concedes that Murakami et al. and Whipp et al. do not disclose "without communication between the rental car and the reservation server" and relies on Rosenberg et al. to make up for the deficiency. (Final Rejection at 7)

As previously discussed in connection with Claim 1 and elsewhere, however, the disclosure of Rosenberg et al. does not suggest a digital key that dispenses with the need for a data communication link between a rental car and a central station. To the contrary, it is essential to Rosenberg et al. that a continuous data link is necessary while a vehicle is in normal use, even though a one-time data link may be sufficient when a vehicle is to be moved for parking purposes. While the system of Rosenberg et al. may be employed in a manner that eliminates need for communication between a *vehicle location system control center* and a *central computer*, it is clear that Rosenberg et al. does not eliminate the need for communication *from the car to a central computer*. The disclosure of Rosenberg et al. *would require a data communication link between a driver and a central computer* to initiate a data communication link involving a central station to determine

whether a driver is authorized to use a car. (See Rosenberg et al., Paragraphs 0071 and 0199 and Figures 1-7) Thus, the system of Rosenberg et al. provides that a driver may either (a) cause a central computer be put in communication with a vehicle location control center or (b) cause a parking code associated with a vehicle's current parking location to be communicated from the driver of the vehicle to a central computer. Claim 11, by contrast, enables the digital key to work without such a data communication link or other communication external to the car. (See Rosenberg et al., Paragraphs 0071 and 0199)

Appellants thus respectfully submit that a combination of Murakami et al., Whipp et al., and Rosenberg et al. would not result in Claim Group 2.

### Claim Group 3

Claim Group 3 (Claims 6-7) is drawn to a system for providing a digital key for a car rental system on a user-provided device, which is complementary to, but is not required by, the car rental system described in Claim Group 1. The claims of Claim Group 3 are patentably distinct from each other and from the claims of the other claim groups.

Claim Group 3 provides that a digital key is stored “on a storage device provided by the prospective renter” (Claim 6) rather than by the management system and that “the storage device is a smart card” (Claim 7). In rejecting these claims, the Examiner erroneously found that Whipp et al. disclosed limitations involving a “digital key” as in the claimed invention. (Final Rejection at 5) As discussed above, however, neither the digital key of the present invention nor, by extension, any feature relating to the use of a digital key, is suggested by Whipp et al. Appellants respectfully submit that a combination of Murakami et al., Whipp et al., and Rosenberg et al. would not result in Claim Group 3.

#### Claim Group 4

Claim Group 4 (Claims 9-10) is drawn to a rental car system in which a digital key is invalidated by the renter when the car is returned, which is complementary to, but is not required by, the systems described in Claim Groups 1 and 3. The claims of Claim Group 4 are patentably distinct from each other and from the claims of other claim groups.

The Examiner erroneously found that Murakami et al. disclosed a system “wherein a renter of a car invalidates a valid digital key upon returning a car to the car rental system and presents an invalidated digital key to the key return system to complete a car return (Col. 11, lines 6-67 to Col. 12, line 67).” (Final Rejection at 5-6) As discussed above, however, neither a digital key nor, by extension, any feature relating to use of a digital key, is suggested by Murakami et al. Furthermore, Murakami et al. do not suggest a car with “a means to invalidate a digital key” (Claim 1), and therefore do not suggest a system in which such means are employed so that “a renter of a car invalidates a valid digital key upon returning a car to the car rental system and presents an invalidated digital key to the key return system to complete a car return.” (Claim 9) Appellants respectfully submit that a combination of Murakami et al., Whipp et al., and Rosenberg et al. would not result in Claim Group 4.

#### Claim Group 5

Claim Group 5 (Claim 15) is drawn to a method of creating a digital key for a car rental system, which is complementary to, but is not required by, the methods described in Claim Group 2. The claim of Claim Group 5 is patentably distinct from the claims of the other claim groups.

The Examiner erroneously found that Whipp et al. disclosed limitations involving various steps involving a “digital key,” including the steps claimed in Claim 15. (Final Rejection at 9) As discussed above, however, neither the digital key of the present invention nor, by extension, the performance of a step involving a digital key, is suggested by Whipp et al. Appellants respectfully submit that a combination of



Murakami et al., Whipp et al., and Rosenberg et al. would not result in Claim Group 5.

#### Claim Group 6

Claim Group 6 (Claims 16-18) is drawn to a method of employing a portable storage device as a digital key in a rental car, which is complementary to, but is not required by, the methods of Claim Groups 2 or 5. The claims of Claim Group 6 are patentably distinct from each other and from the claims of other claim groups.

In rejecting Claim Group 6, the Examiner erroneously found Whipp et al. to have disclosed limitations involving various steps involving a “digital key,” including those claimed in Claim Group 6. (Final Rejection at 9) As discussed above, however, neither the digital key of the present invention nor, by extension, the performance of a step involving a digital key, is suggested by Whipp et al. Appellants respectfully submit that a combination of Murakami et al., Whipp et al., and Rosenberg et al. would not result in Claim Group 6.

ARGUMENT VIII. REJECTION OTHER THAN 35 U.S.C. §§102, 103 AND 112

There is no rejection other than 35 U.S.C. §§102, 103, and 112 and no rejection other than the rejections under 35 U.S.C. § 103 discussed above.

IX. APPENDIX OF CLAIMS INVOLVED IN THE APPEAL (37 C.F.R. §1.192(C)(9))

The text of the claims involved in this Appeal are:

1. A car rental system comprising:

a fleet of cars, each of which is operable only when a valid digital key is presented to the car, and each of said fleet of cars has a means to invalidate a digital key; and

a management system for handling reservation and car return, said management system including:

a key generation system for generating digital keys for renters of the car rental system;

a key return system for processing digital keys returned by renters,

wherein there exists no data communication link between the fleet of cars and the management system.

2. The system in claim 1, further comprising a parking lot guarded by a security gate, said fleet of cars being parked within confines of said parking lot when not rented by a renter of the car rental system, said security gate only opening when a valid digital pass is presented by a renter of the car rental system.

3. The system in claim 1, wherein the management system is accessed by a prospective renter over a network and the prospective renter is given a digital key to operate a particular car and a digital pass to open the gate of the parking lot where said particular car is parked, after said prospective renter completes a reservation for said particular car, said digital key and digital pass being effective starting from the time specified by said reservation.

4. The system in claim 3, wherein the prospective renter accesses the management system at a kiosk located in the parking lot where the particular car is parked.

5. The system in claim 3, wherein the prospective renter accesses the management system over the Internet.
6. The system in claim 3, wherein the key generation system stores a digital key on a storage device provided by a prospective renter.
7. The system in claim 6, wherein the storage device is a smart card.
8. The system in claim 6, wherein the digital key comprises car and user identification (ID) signed by the management system to authenticate the digital key.
9. The system in claim 1, wherein a renter of a car invalidates a valid digital key upon returning a car to the car rental system and presents an invalidated digital key to the key return system to complete a car return.
10. The system in claim 9, wherein the invalidation of a valid digital key includes storing car status information relevant to computing by the key return system a receipt for the renter.
11. A computer implemented method for operating a car rental system comprising the steps of:
  - accessing a reservation server by a prospective car renter to reserve a car;
  - authenticating the prospective car renter by the reservation server and, upon the reservation server successfully authenticating the user, prompting the prospective car renter for the date, time, and location for pickup and return, and the type of car;
  - checking by the reservation server an availability of a requested car and, if a car is available, creating by the reservation server a digital key by car and user information with a digital signature of the reservation server; and

downloading the digital key to a portable storage device, the portable storage device being used to gain access to a rental car without communication between the rental car and the reservation server.

12. The method in claim 11, wherein the step of accessing the reservation server is performed via a network.

13. The method in claim 12, wherein the network is the Internet.

14. The method in claim 11, wherein the step of authenticating a prospective car renter includes the steps of:

prompting the prospective car renter to enter a personal identification number (PIN); and

comparing the entered PIN with a valid PIN for the prospective car renter.

15. The method of claim 11, wherein the step of creating a digital key comprises the steps of:

computing a hash of the car renter's valid PIN;

combining car and renter identification with the hashed PIN; and

digitally signing the combined information by said reservation server.

16. The method in claim 11, further comprising the steps of:

inserting the portable storage device by a car renter into a slot for receiving the portable storage device in a rented car;

upon detecting the portable storage device inserted into the slot, obtaining by an access controller installed in the rented car the digital key stored on the portable storage device and checking by the access controller whether the digital key is valid and verifying the signature on the digital key;

if the digital key is valid and the signature is verified, the access controller then prompting the car renter to enter his or her identification and checking for correctness of the car renter's identification; and

if the enter identification for the car renter matches a correct identification on the portable storage device, the access controller activating instruments of the car which the car renter is authorized to have access to.

17. The method in claim 16, further comprising the steps of:

upon receiving a car renter's request to return a car, prompting the car renter to insert his or her portable storage device into the slot for the portable storage device;

obtaining by the access controller car status information and car identification;

creating by the access controller a return packet by combining car status information and the current digital key;

signing the return packet by the access controller, appending the car identification to the signed return packet, and saving the signed return packet into the portable storage device; and

invalidating by the access controller a current digital key.

18. The method in claim 17, further comprising the steps of:

upon receiving a car renter's request to return a car, retrieving the return packet from the portable storage device;

verifying a signature on the return packet; and

updating the car status and printing a receipt for the car renter.

19. The method in claim 11, wherein the portable storage device is a smart card.

20. The system in claim 1, wherein each of said fleet of cars has a storage device for storing a record of the digital key.

X. OTHER MATERIALS THAT APPELLANT CONSIDERS NECESSARY OR DESIRABLE

There are no other materials considered necessary or desirable for consideration in this appeal.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael E. Whitham", written over the typed name.

Michael E. Whitham  
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